In his *Flora Fernandesiana* 10. 1835, Montagne also writes *Uredo Cestri* Bertero and *Uredo Hydrocotyles* Bertero, not Montagne as quoted in references to the work.—E. W. D. HOLWAY, *Decorah, Iowa.*

PUCCINIA INANIPES.

THROUGH some error the description of this species (BOT. GAZ. **31**: 332. 1901) is incomplete. It should be:

Puccinia inanipes Diet. & Holw., n. sp.—Sori on both sides of the leaf, particularly on the upper, scattered, punctiform; uredosori brown; uredospores elliptical, brown, echinulate, 25–30 × 20–25μ; teleutosori black; teleutospores broadly elliptical, rounded at both ends, and when dry with both ends depressed, scarcely constricted, apex with a very slight cucullate thickening, smooth, dark chestnut-brown, 34–42 × 28–31μ, with long hyaline hollow pedicels which easily break at the base from the host plant.

On *Eupatorium brevipes*, Oaxaca, Oct. 18, 1899, no. 3677.—E. W. D. HOLWAY, *Decorah, Iowa.*

THE POSITION OF PLEUROCOCCUS AND MOSSES ON TREES.

HAVING observed during the past winter that certain chlorophyll-containing plants do not grow most abundantly on the north side of trees, as is commonly supposed by the laity at least, and as stated in at least one of the more recent books on botany, the author herewith presents some of the results of his observations, which are still in progress.

The trees on which the observations were made were located in a piece of woodland and were principally black oaks with a few white oaks, chestnuts, and beeches. The chlorophyll-containing plants found growing upon these trees were principally pleurococcus and some members of the Bryaceae. These were growing upon all sides on the bark of the trees except the southwest side, and approximately in the following ratio: In 10 per cent. of the trees upon the west side; in 10 per cent. upon the northwest side; in 10 per cent. upon the north side; in 20 per cent. upon the northeast side; in 35 per cent. upon the east side; and in 15 per cent. upon the southeast side.

A further examination showed that they grew in the greatest profusion on the shelving side of the trunks of trees with a slant of 10° to 20°; furthermore trunks which were nearly vertical were not inhabited by these minute plant forms. They were, however, nearly always found upon the slanting surfaces near the ground. In some cases the growth extended approximately to a height of 20 or 30 feet, and the position varied as the shelving varied, so that the growth might extend on the same tree at different heights from 90° to 270°.

Rather careful observations thus far obtained tend to show that it is the shelving portions of the trunks of trees which receive and hold the greatest amount of moisture, and as the latter is apparently one of the most important requisites for the development of these green plants, we can readily understand why we find them distributed on nearly all sides of the trees, and not limited, as popularly supposed, to the north side of trees only.— HENRY KRAEMER, *Philadelphia, Pa.*

CONTRIBUTIONS TO THE KNOWLEDGE OF THE PHYSIOLOGY OF KARYOKINESIS.[1]

(WITH ONE FIGURE)

THE investigations, concerning which this is a preliminary report, were undertaken to throw more light upon the subject of the physiology of karyokinesis, a subject which has not received attention commensurate with its importance. This paper presents only the results regarding the relationship of light of various wave-lengths to the rapidity of mitotic nuclear division. The investigations were undertaken at the suggestion of Dr. E. Mead Wilcox and were completed under his direction. I take this opportunity to offer him my sincere thanks for constant and helpful suggestions throughout the course of the investigations.

The roots of *Allium Cepa* were selected as affording the most convenient and suitable objects for the experiments. Bulbs of uniform medium size were selected with great care in the local markets. These bulbs were placed over suitable vessels in such a position that the base of the bulb barely touched the pure water with which the vessels were filled. The usual adventitious roots soon formed, and these were

[1] Contribution from the Botanical Laboratory of the Oklahoma Agricultural and Mechanical College. I. Abstract of thesis.